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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/798,785	03/12/2004	Masahiro Kurokawa	044499-0209	5613

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EXAMINER

STOCK JR, GORDON J

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,785	KUROKAWA ET AL.	
	Examiner	Art Unit	
	Gordon J. Stock	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6,10-19 is/are rejected.
- 7) ☒ Claim(s) 2,8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20040708</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species I in the reply filed on November 6, 2006 is acknowledged. However, due to the allowable subject matter set forth in this action that encompasses generic claims mentioned in paper 20061002 and due to the persuasiveness of the arguments by the applicant in election of November 6, 2006, Examiner has withdrawn the election/restriction requirement. Subsequently, **claims 1, 2, 4-6, 8-19** will be treated for their merits in the action following.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on July 8, 2004 has been considered by the examiner.

Drawings and Specification

4. Figures 1-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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5. The drawings and specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S44 of Fig. 13. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
7. The abstract of the disclosure is objected to because the numerical designations should be enclosed in parentheses. Correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1, 6, 10, 13, 18, 19** are rejected under 35 U.S.C. 102(e) as being anticipated by **Kim et al. (2004/0246493)** in evidence of **Finarov (2005/0002624)**.

As for **claim 1**, Kim in an apparatus for measuring thickness of multiple layers of thin films (paragraph 0029) comprising: a light source that emits white light (Fig. 5: 500; paragraph 0079); a light projection system that projects light from the light source to the observation area in the form of parallel light (Fig. 5: 506 to 508 to 512); a photodetector of a region-divided type in which a plurality of detection cells that receive the light from the observation area are collected in a two-dimensional space (Fig. 5: 542); an image formation optical system that forms an image of light reflected by the measurement target in the observation area onto the photodetector, said light being the light projected by the light projection optical system (Fig. 5: 510 and 530); a spectroscopic part that can make only light in a predetermined wavelength band incident upon the photodetector and selectively switch the wavelength band (Fig. 5: 538; paragraph 0070); a signal processing portion that extracts a pattern registered beforehand from the image of the measurement target taken in by the photodetector, defining a predetermined position in this pattern as the film measurement position, obtaining a plurality of images having different wavelengths selectively switched by the spectroscopic part and thereby measuring the properties of the film of the measurement target at a predetermined film measurement position based on the signals of the detection cells corresponding to the film measurement position of each of the plurality of images (paragraphs 0068, 0096) in evidence of Finarov's system for measuring thin films (paragraphs 0007 and 0008).

Though the Examiner treated the recitations 'for emitting white light; for projecting a light ...in the form of parallel light; for receiving light from the observation area; for forming an image of light reflected ...light projection system; for extracting a pattern registered ... corresponding to the film measurement position of each of the plurality of images' positively, these recitations are an intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

As for **claim 6**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses a frame grabbing part (Fig. 5: 546) and a display part, a monitor (Fig. 5: 556). As for the recitations 'for extracting ... taken in by the photodetector' and 'for displaying the extracted pattern ... observation area,' it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

As for **claim 10**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses a display part, a monitor (Fig. 5:556). As for the recitation 'for providing color display ... color-displayed image,' it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

As for **claim 11**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses an image of a measurement target to be taken in by the photodetector is a periodic repetition of a pattern having a predetermined shape; wherein a signal processing portion extracts a characteristic point of the pattern from the image of the measurement target taken in by the photodetector and defines as the measurement position a predetermined position with respect to the measurement point (paragraph 0068: given pattern suggests predetermined shape and 'pattern' demonstrates periodic repetition; Fig. 1b: 122, 120).

As for **claim 13**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses the signal processing portion determines a plurality of film measurement positions based on an image in the observation area taken in by the photodetector and obtains properties of a film based on a signal extracted from the plurality of film measurement positions (paragraphs 0066, 0067, and 0097).

As for **claim 18**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses a 450 nm spectroscopic filter, a 550 nm spectroscopic filter, a 650 nm spectroscopic filter, a plurality of visible light, NIR, and IR filters arranged side by side in a filter wheel consecutively in sequence (Fig. 5: 538; demonstrated with 400nm to 800nm range measured: Figs. 7-9; paragraph 0070).

Though the Examiner treated the recitations 'for a wavelength of about 450nm, 550nm, 650nm (respectively); for a visible light region; and for near-infrared through infrared regions' positively, these recitations are an intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the

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claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

As for **claim 19**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses reflected light and transmitted light of light emitted from the light source (Fig. 5: transmitted from 500 to 506; reflected from 508) with which a measurement target has been irradiated (Fig. 5: 512) can be taken by the photodetector (Fig. 5: 542).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 4-5** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (2004/0246493)** in evidence of **Finarov (2005/0002624)** in view of **Sugiyama et al. (6,137,575)**.

As for **claims 4-5**, Kim in evidence of Finarov discloses everything as above (see claim 1). Kim is silent concerning a part that registers in a storage part as the registered pattern a pattern extracted on the basis of a characteristic point, a partial image, when the characteristic point, partial image, is specified from an outside through an input part on an image of a measurement target taken in by the photodetector and a part that displays the extracted pattern in a condition where the pattern is superimposed on an image in the observation area. However, Sugiyama in a film thickness measuring apparatus teaches a part for extracting a partial image, characteristic point, a minimum spot imaging position, and registering it in a storage part as the registered pattern when the partial image is specified from an outside through an input part on an image of a measurement target taken in by the photodetector and a part for displaying the extracted pattern in a condition where the pattern is superimposed on an image in the observation area (Fig. 4: 21, 22, 23; Fig. 1B: 7, M; col. 2, lines 30-45). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have a part that registers in a storage part as the registered pattern a pattern extracted on the basis of a characteristic point, a partial image, when the characteristic point, partial image, is specified from an outside through an input part on an image of a measurement target taken in by the photodetector and a part that displays the extracted pattern in a condition where the pattern is superimposed on an image in the observation area in order to be able to align the measurement device with the measurement region to be inspected.

Though the Examiner treated the recitations 'for registering... taken in by the photodetector,' 'for displaying ... in the observation area (**claim 4**),' 'for extracting a pattern ... taken in by the photodetector' and 'for displaying ...in the observation area (**claim 5**)' positively,

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these recitations are an intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

12. **Claims 12, 14-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (2004/0246493)** in evidence of **Finarov (2005/0002624)**.

As for **claim 12**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). Kim does not explicitly state that a measurement target has a frame shaped pattern though he mentions that the targets may be liquid crystal displays (paragraph 0004). Examiner takes official notice that it is well-known in the art that LCD displays comprise frame-shaped patterns. Therefore, it would be obvious that the measurement target to be taken has a frame-shaped pattern for liquid crystal displays are inspected. As for having a center of intersections of patterns be defined as a measurement point, Kim is silent. However, he teaches that the whole surface is inspected and may have certain points inspected (paragraph 0096). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that a center of intersections of patterns be defined as a measurement point for the whole surface may be inspected.

As for **claims 14-15**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, he discloses that an image is extracted to determine a film measurement position (paragraphs 0068, 0096) in evidence of Finarov's system for measuring thin films (paragraphs 0007 and 0008) and that a plurality of measurement targets formed as divided on a substrate may be measured (paragraphs 0091 and 0096). Kim does not explicitly state that a

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measurement target has its image taken by the photodetector in such a manner as to contain a corner of the measurement target or the substrate. However, he teaches that the whole surface is inspected and may have certain points inspected (paragraph 0096). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made that the corner of the measurement target was extracted to determine the film measurement position for the whole substrate surface may be inspected.

As for **claim 16**, Kim in evidence of Finarov discloses everything as above (see **claim 15**). Kim does not explicitly state that a region of the observation area where an image taken in by the photodetector can be set for each of product types; however, he mentions that several types of products may be inspected (paragraph 0004). Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to have the region of the observation area where an image is taken in by the photodetector be set for each of product types in order to inspect the film profile of a variety of substrates.

13. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kim et al. (2004/0246493)** in evidence of **Finarov (2005/0002624)** in view of **Suzuki et al. (JP 57052806 A)**.

As for **claim 17**, Kim in evidence of Finarov discloses everything as above (see **claim 1**). In addition, Kim discloses a spectroscopic part is equipped with spectroscopic filters in the visible to near infrared regions ((Fig. 5: 538; demonstrated with 400nm to 800nm range measured: Figs. 7-9; paragraph 0070). In addition, he discloses a part that measures film thickness of a colored film (Fig. 7: demonstrates a colored film; paragraph 0096). Kim is silent concerning chromaticity measurements. However, Suzuki in a device for measuring film

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thickness teaches that chromaticity is measured to determine film thickness (constitution).

Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to measure chromaticity in order to derive film thickness.

Though the Examiner treated the recitations 'for visible light to near infrared light regions;' and 'for measuring chromaticity and film thickness of a colored thin film' positively, these recitations are an intended use. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Allowable Subject Matter

14. **Claims 2, 8, and 9** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to **claim 2**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical film measuring device in a signal processing portion a film measurement position is determined with an image in which a contrast of an image becomes highest amongst the plurality of images obtained, in combination with the rest of the limitations of **claim 2**.

As to **claim 8**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical film measuring device wherein the spectroscopic part is set so that a contrast of an image may be highest, in combination with the rest of the limitations of **claim 8**.

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As to **claim 9**, the prior art of record, taken alone or in combination, fails to disclose or render obvious in an optical film measuring device a wavelength band of a spectroscopic image in which a contrast of an image to be taken in by the photo-detector becomes highest is obtained, in combination with the rest of the limitations of **claim 8**.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent 7,012,699 to Shinya et al. (specifically, Fig. 6)

WO 03/040771 A2 to Finarov (PCT filed in relation to Finarov 2005/0002624)

WO 03/025497 A1 to Kim et al. (PCT filed in relation to Kim 2004/0246493)

U.S. Patent 6,181,427 to Yarussi et al.

U.S. Patent 5,608,526 to Piwonka-Corle et al.

Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged

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with rebutting the well-known statement in the next reply after the Office action in which the well known statement was made.

Fax/Telephone Numbers

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (571) 273-8300

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431.

The examiner can normally be reached on Monday-Friday, 10:00 a.m. - 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached at 571-272-2800 ext 77.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private Pair system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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February 4, 2007



Layla Lauchman
Primary Examiner
Art Unit 2877